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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/676,965

Filing Date: October 01, 2003

Appellant(s): CHEN ET AL.

Mark R. Bilak

For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 12/10/2007 appealing from the Office

action mailed 03/08/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,625,876	Gilhousen et. al.	01/29/1997
20020154610	Tiedemann Jr. et al	10/24/2002
6,011,787	Nakano et al.	01/04/2000

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,3,4,7,10,12,13,17,18,19 and 22 are rejected under U.S.C. 103(a) as being unpatentable over Gilhousen et al., (U.S. 5,625,876), (hereinafter Gilhousen).

Regarding **claims 1 and 10**, Gilhousen discloses a method of improving reverse link communications at a Radio Base Station (RBS) providing a plurality of radio sectors (see col. 8, lines 35-42), the method comprising:

 RBS for mobile stations served by the RBS based on assigning one or more additional reverse links from remaining sectors of the RBS if a reverse link is assigned to a mobile station from a serving sector of the RBS (see col. 8, line 51- col. 9, line 21); and

 combining reverse link signals from the assigned reverse links to obtain a combined reverse link signal for the mobile station (see col. 8, lines 35-42 and col.10, lines 24-56); but fails specifically to discloses “forcing always-softer reverse link handoff conditions”.

However, Gilhousen does mention softer handoff conditions where mobile unit simultaneously communicates and monitors the pilot signals in multiple sectors of the base station X (see col. 8, line 51- col. 9, line 21; i.e., the communicating and monitoring include signal pilots from multiple sectors of the base station).

It would therefore have been obvious to one of the ordinary skill in the art to utilize the teaching of Gilhousen achieving a system whereby signals from sectors of common base station are combined to provide an improved system performance (see col. 8, lines 35-42 and col.10, lines 24-56).

Regarding **claim 17**, Gilhousen discloses method of improving reverse link communications at a Radio Base Station (RBS) having a plurality of radio sectors

(see col. 8, lines 35-42), the method comprising:

selecting a first sector of the RBS as a serving sector for a mobile station and assigning forward and reverse links to the mobile station at the serving sector (see col. 8, line 51- col. 9, line 21);

selectively handoff condition for the mobile station at the RBS by assigning one or more additional reverse links to the mobile station at one remaining sectors of the RBS (see col. 8, line 51- col. 9, line 21); and

combining the reverse link signals from the mobile station from the assigned reverse links to form a combined reverse link signal (see col. 8, lines 35-42 and col.10, lines 24-56); but fails specifically to discloses "forcing always-softer reverse link handoff conditions".

However, Gilhousen does mention softer handoff conditions where mobile unit simultaneously communicates and monitors the pilot signals in multiple sectors of the base station X (see col. 8, line 51- col. 9, line 21; i.e., the communicating and monitoring include signal pilots from multiple sectors of the base station).

It would therefore have been obvious to one of the ordinary skill in the art to utilize the teaching of Gilhousen achieving a system whereby signals from sectors of common base station are combined to provide an improved system performance (see col. 8, lines 35-42 and col.10, lines 24-56).

Regarding **claims 3 and 12**, as recited in claims 1 and 10, Gilhousen discloses that the method further comprising assigning the one or more additional reverse

links irrespective of whether the corresponding sectors are suitable for forward link assignments to the mobile station (= base station establishes the availability of resources in sector beta which is candidate set; and sector alpha is the active set, see col. 8, line 51- col. 9, line 21).

It would therefore have been obvious to one of the ordinary skill in the art to utilize the teaching of Gilhousen achieving a system whereby signals from sectors of common base station are combined to provide an improved system performance (see col. 8, lines 35-42 and col.10, lines 24-56).

Regarding **claims 4 and 13** , as recited in claims 1 and 10, Gilhousen discloses that the method further comprising assigning the one or more additional reverse links irrespective of whether the corresponding sectors are included in a current active set of the mobile station.(= base station establishes the availability of resources in sector beta which is candidate set; and sector alpha is the active set, see col. 8, line 51- col. 9, line 21).

It would therefore have been obvious to one of the ordinary skill in the art to utilize the teaching of Gilhousen achieving a system whereby signals from sectors of common base station are combined to provide an improved system performance (see col. 8, lines 35-42 and col.10, lines 24-56).

Regarding **claims 7 and 22**, as recited in claims 1 and 17, Gilhousen discloses that the method further comprising causing the mobile station to reduce a reverse link transmit power to improved reception quality of the combined reverse link

signal (= power adjustment command for the mobile unit is created by the controller from the estimate signal strengths of each element 316A-316N, see col. 5, lines 42-50; col. 7, lines 60-65 and Fig. 2).

It would therefore have been obvious to one of the ordinary skill in the art to utilize the teaching of Gilhousen achieving a system whereby signals from sectors of common base station are combined to provide an improved system performance (see col. 8, lines 35-42 and col.10, lines 24-56).

Regarding **claim 18**, as recited in claim 17, Gilhousen discloses that the method further comprising transmitting the combined reverse link signal over a backhaul link to a supporting Base Station Controller (BSC) (= combined signal from the base station may be send to the communication system controller (see col. 10, lines 49-56).

It would therefore have been obvious to one of the ordinary skill in the art to utilize the teaching of Gilhousen achieving a system whereby signals from sectors of common base station are combined to provide an improved system performance (see col. 8, lines 35-42 and col.10, lines 24-56).

Regarding **claim 19**, as recited in claim 17, Gilhousen discloses that the method further comprising making forward link assignments independently of assigning the one or more additional reverse links to the mobile station (see col. 8, lines 35-42 and col.10, lines 24-56).

It would therefore have been obvious to one of the ordinary skill in the art

to utilize the teaching of Gilhousen achieving a system whereby signals from sectors of common base station are combined to provide an improved system performance (see col. 8, lines 35-42 and col.10, lines 24-56).

4. Claims 2,9,11,16 and 24 are rejected under U.S.C. 103(a) as being unpatentable over Gilhousen in view of Nakano et al., (6,011,787), (hereinafter Nakano).

Regarding **claims 2 and 11**, as recited in claims 1 and 10, Gilhousen discloses the method, wherein combining reverse link signals from the assigned reverse links to obtain a combined reverse link signal for the mobile station (see col. 8, lines 35-42 and col.10, lines 24-56); but fails to disclose that the combination process comprises “performing maximum ratio combining of the reverse link signals”.

However, Nakano teaches the “performing maximum ratio combining of the reverse link signals” (see col. 8, lines 41-50).

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Nakano with the system of Gilhousen for the benefit of achieving a system whereby maximal ratio combining among sectors is use to achieve higher compositional gain (see col. 2, lines 1-12 and lines 57-62).

Regarding **claims 9, 16 and 24**, as recited in claims 1,10 and 17, Gilhousen but fails to disclose increasing a finger search window used by RAKE receiver radio circuits at the RBS.

However, Nakano teaches that RAKE receiver 59 carries out maximal radio combining of outputs (see col. 7, line 26- col. 8, line 50).

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Nakano with the system of Gilhousen for the benefit of achieving a system whereby maximal ratio combining among sectors is used to achieve higher compositional gain (see col. 2, lines 1-12 and lines 57-62).

5. **Claims 5,6,8,14,15,20,21 and 23 are rejected under U.S.C. 103(a) as being unpatentable over Gilhousen in view of Tiedemann JR. et al., (20020154610 A1), (hereinafter Tiedemann).**

Regarding **claims 5 and 14**, as recited in claims 1 and 10, Gilhousen fails to teach that the method comprises: determining whether any reverse link supplemental channel (R-SCH) is assigned to the mobile station; a R-SCH is assigned to the mobile station.

However, Tiedemann discloses that mobile station request for reverse supplementary channel (R-SCH) from the base station when the mobile station has packet data to be sent, and the reverse supplemental channel (R-SCH) for transmission is possible after the request has been granted to the mobile station (see Page 6, line 0068).

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Tiedemann with Gilhousen's for the benefit of achieving a system that is capable of using R-SCH to transmit packet data to the base station during a communication.

Regarding **claims 6 and 15**, as recited in claims 5 and 14, Gilhousen fails to teach reverse link "fundamental channel (R-FCH) assigned to the mobile station.

However, Tiedemann discloses that the mobile station could use reverse fundamental channel (R-FCH) to request reverse supplemental (R-SCH) from the base station (see Page 6, line 0068).

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Tiedemann with Gilhousen's for the benefit of achieving a system that is capable of using R-SCH to transmit packet data to the base station during a communication.

Regarding **claim 8**, as recited in claim 7, Gilhousen fails to teach that the method comprises causing the mobile station to reduce a transmit gain of a reverse link supplemental channel signal transmitted by the mobile station to the RBS on the assigned reverse links.

However, Tiedemann discloses various ways to control the reverse supplementary channel transmit power (see Page 9, lines 0097-0099).

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Tiedemann with Gilhousen's for the benefit of

achieving a system that is capable of controlling the R-SCH transmit power without terminating communication session between base station and the mobile station.

Regarding **claim 20**, as recited in claim 17, Gilhousen fails to teach that the method comprises; reverse link supplemental channels (R-SCHs) are being used for the mobile station.

However, Tiedemann teaches that mobile station requests for reverse supplementary channel (R-SCH) from the base station when the mobile station has packet data has to be sent, and the reverse supplemental channel (R-SCH) for transmission is possible after the request has been granted to the mobile station (see Page 6, line 0068).

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Tiedemann with Gilhousen's for the benefit of achieving a system that is capable of using R-SCH to transmit packet data to the base station during a communication.

Regarding **claim 21**, as recited in claim 20, Gilhousen fails to teach reverse link fundamental channel (R-FCH) associated with the mobile station.

Tiedemann discloses that the mobile station could use reverse fundamental channel (R-FCH) to request reverse supplemental (R-SCH) from the base station (see Page 6, line 0068).

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Tiedemann with Gilhousen for the benefit of achieving a system that is capable of using the reverse fundamental channel (R-FCH) to send information to the base station.

Regarding **claim 23**, as recited in claim 22, Gilhousen fails to teach that the method comprises causing the mobile station to reduce a transmit gain of a reverse link supplemental channel signal transmitted by the mobile station to the RBS on the assigned reverse links.

However, Tiedemann discloses various ways to control the reverse supplementary channel transmit power (see Page 9, lines 0097-0099).

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Tiedemann with Gilhousen's for the benefit of achieving a system that is capable of reducing R-SCH transmit power without terminating communication session between base station and the mobile.

(10) Response to Argument

Regarding the alleged unpatentability over cited prior arts of Gilhousen et al., (U.S. 5,625,876), (hereinafter Gilhousen), Nakano et al., (6,011,787), (hereinafter Nakano) and Tiedemann JR. et al., (20020154610 A1), (hereinafter Tiedemann) the Examiner will detailed the position in which the examination of the cited claims were made.

Appellant's Argument:**Claim Rejections under 35 U.S.C. §103(a)**

Regarding claims 1, 3, 7,10,12,17-19 and 22 the Appellant argues that Gilhousen fails to teach “forcing always-softer reverse link handoff conditions”

However, the Examiner respectfully disagrees with such an assertion. See below for further clarification.

The Appellant's Applicant's specification defines the claimed limitation “forcing always-softer reverse link handoff conditions” as an assignment of “extra or additional reverse link” for the mobile station (see Specification; Par. 0020).

Gilhousen fails specifically to mention “forcing always-softer reverse link handoff conditions”. However, Gilhousen does mention softer handoff conditions where mobile unit simultaneously communicates and monitors the pilot signals in multiple sectors of the base station X (see col. 8, line 51- col. 9, line 21). Thus the communicating and monitoring include **signal pilots from multiple sectors** of the base station, whereby the signal pilot from multiple sectors is being associated with the assignment of the “extra or additional reverse link” as described in the specification.

It would therefore have been obvious to one of the ordinary skill in the art to utilize the teaching of Gilhousen to achieving a system whereby signals from sectors of common base station are combined to provide an improved system performance at the mobile station (see col. 8, lines 35-42 and col.10, lines 24-56).

Appellant's Argument**Claim Rejections under 35 U.S.C. §103(a)**

The Appellant argues (in reference to claims 3 and 12) that Gilhousen fails to teach the claimed limitation "assigning the one or more additional reverse links irrespective of whether the corresponding sectors are suitable for forward link assignments to the mobile station"

However, the Examiner respectfully disagrees with such an assertion. See below for further clarification.

"Irrespective" of whether the corresponding sectors are suitable for forward link assignments to the mobile station" in the claim limitation does not mean the base station will not assigning the one or more additional reverse links when the corresponding sectors are not suitable for forward link assignments to the mobile station. Thus, the base station will always assign one or more addition reverse links regardless the suitability for forward link assignment. Gilhousen discloses that the base station establishes the availability of resources in sector beta which is candidate set; and sector alpha is the active set, see col. 8, line 51- col. 9, line 21). Therefore, the Gilhousen teachings meets the claimed condition of the "assigning the one or more additional reverse links irrespective of whether the corresponding sectors are suitable for forward link assignments to the mobile station".

Appellant's Argument**Claim Rejections under 35 U.S.C. §103(a)**

The Appellant argues (in reference to claims 2,9,11,16 and 24) that Nakano fails to teach the claimed limitation "RAKE receiver carries out maximal radio combining of outputs", and Nakano reference is irrelevant.

However, the Examiner respectfully disagrees with such an assertion. See below for further clarification.

In addition to Gilhousen teaching of the combined signal at the base station to provide an improved system performance at the mobile station (see motivation in claim 1 rejection), Nakano specifically mentions that RAKE receiver carries out maximal radio combining of outputs (see (see col. 7, line 26- col. 8, line 50). Therefore, Nakano is a relevant art and the combination of Gilhousen and Nakano are proper.

Appellant's Argument**Claim Rejections under 35 U.S.C. §103(a)**

The Appellant argues (in reference to claims 5,6,8,14,15,20 and 23) since Gilhousen fails to teach the claimed limitation "forcing...conditions", Teidemann also fails to the claimed limitations in the above claims.

However, the Examiner respectfully maintains that Gilhousen teaches the claimed limitation "forcing...conditions", as discuss above. Therefore, the combination of Gilhousen and Teidemann is proper in claims claims 5, 6, 8,14,15,20 and 23.

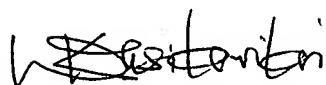
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(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



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03/03/2008

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